CLAIMS:

1.   A digital transmission system (1) comprising: a transmitter (2), a receiver (3), and a transmission channel (4) coupled to both the transmitter (2) and the receiver (3), whereby the transmitter (2) is provided with an encoder (5) wherein a multilevel input signal is encoded such, that an encoded DC-balanced digital channel code is transmitted to the receiver (3), characterized in that the encoder (5) is embodied to match levels of the multilevel input signal and code words of the DC-balanced digital channel code such, that disparities of the selected code words are symmetrically grouped around zero disparity.

2.   A digital transmission system (1) comprising: a transmitter (2), a receiver (3), and a transmission channel (4) coupled to both the transmitter (2) and the receiver (3), whereby the receiver (3) is provided with a decoder (6), wherein a received encoded DC-balanced digital channel code is decoded into a multilevel output signal, characterized in that the decoder (6) is embodied to decode the received DC-balanced digital channel code words, whose disparities are symmetrically grouped around zero disparity.

3.   The digital transmission system (1) according to claim 1 or 2, characterized in that the encoder (5) and/or decoder (6) comprise(s) a look-up table (10,; 11) containing data about the levels of the multilevel input signal corresponding to code words of the DC-balanced digital channel code.

4.   The digital transmission system (1) according to claim 3, characterized in that the data in the look-up table (10; 11) shows a monotonous relation between the consecutive levels of the multilevel input signal and the consecutive disparities of the corresponding selected code words.

5.   The digital transmission system (1) according to claim 4, characterized in that the data in the look-up table (10; 11) shows a monotonous relation between the consecutive increasing or decreasing respective levels of the multilevel input signal and the consecutive increasing or decreasing respective disparities of the corresponding selected code words.

6.   The digital transmission system (1) according to one of the claims 1-5, characterized in that one or more of the not selected code words is used as a synchronization word.

7.   A transmitter (2) suited for application in a digital transmission system (1) according to one of the claims 1-6, the digital transmission system (1) comprising: a transmitter (2), a receiver (3), and a transmission channel (4) coupled to both the transmitter (2) and the receiver (3), whereby the transmitter (2) is provided with an encoder (5) wherein a multilevel input signal is encoded such, that an encoded DC-balanced digital channel code is transmitted to the receiver (3), characterized in that the encoder (5) is embodied to match levels of the multilevel input signal to code words of the DC-balanced digital channel code such, that disparities of the selected code words are symmetrically grouped around zero disparity.

8.   A receiver (3) suited for application in a digital transmission system (1) according to one of the claims 1-6, the digital transmission system (1) comprising: a transmitter (2), a receiver (3), and a transmission channel (4) coupled to both the transmitter (2) and the receiver (3), whereby the receiver (3) is provided with a decoder (6), wherein a received encoded DC-balanced digital channel code is a decoded into a multilevel output signal, characterized in that the decoder (6) is embodied to decode the received DC-balanced digital channel code words, whose disparities are symmetrically grouped around zero disparity.

9.   A digital code word set for application in the digital transmission system (1) according to one of the claims 1-6, comprising code words having disparities, characterized in that the disparities of the code words are symmetrically grouped around zero disparity.

10.   The digital code word set according to claim 9, characterized in that the disparities of the code words are grouped in not decreasing disparity.